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3 April 1991

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U.S. EPA Contract No.: 68-W8-0089

Work Assignment No.: 09-5PJ7

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Subject: Review Comments for Remedial Investigation Report  
ACS NPL Site, Draft Report Project No. 60251  
November 1990

Dear Mr. Swale:

WESTON comments on the project referenced above are presented in this letter.

SECTION 1

1.1 No comments.

1.2 No comments.

1.3

1.3.1 No comments.

1.3.2 No comments.

1.3.2.1 Page 4, Paragraph 1 - What solvent waste was reclaimed prior to 1970? Any information should be presented here or included in an appendix.

Page 5, Paragraph 1 - What were the specialty chemicals manufactured prior to 1970? Any information should be presented here or included in an appendix.



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Page 5, Paragraph 2 - Where were the incinerators removed to, or were they just dismantled? An explanation should be provided here.

Page 5, Paragraph 3 - What solvent waste was reclaimed from 1970 to 1975? Was it the same as the waste reclaimed prior to 1970? Any information should be presented here or included in an appendix.

Page 6, Paragraph 1 - What solvent wastes are still used? Are they the same as those used prior to 1970 and from 1970 to 1975? Any information should be presented here or included in an appendix.

1.3.2.2 Page 7, Paragraph 1 - How is it known that the Still Bottoms Pond and Treatment Lagoon #1 were taken out of service in 1972? Is this statement based upon examination of a 1973 aerial photograph or other sources? Please explain.

Page 7, Paragraph 1; Figure 1-2; and Aerial Photograph B22 (1970) - The 1970 aerial photograph shows a dark feature which may be a ditch draining to the west in the same area as the oily soil in Figure 1-2. Could there be some correlation? The 1970 aerial photograph also shows a dark area just to north of the Fire Pond. Was it a wet area or another pond? Please address.

Page 7, Paragraph 2; Figure 1-2; and Aerial Photograph B22 (1970) - The 1970 aerial photograph shows two ponds or lagoons in the Off-Site Containment Area when disposal occurred in that area. These should be mentioned in historical text (Subsection 1.3.2) and possibly shown in Figure 1-2. SUGGESTED CHANGE, Page 7, Paragraph 2, Sentence 5: "In the 1970 photograph, numerous drums are present in this area, as well as two ponds or lagoons."

Page 8, Paragraph 2; Figure 1-2 - The location of the former incinerators should be shown on Figure 1-2 and referenced in text. SUGGESTED CHANGE, Page 8, Paragraph 2, insert after Sentence 1: "They were located on the



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eastern portion of the property near Colfax Avenue (Figure 1-2)."

Page 8, Paragraph 5; Figure 1-2; and Aerial Photograph B22 (1970) - The 1970 aerial photograph shows a pond or lagoon in the west-northwest area of Kapica/Pazmey. This should be mentioned in historical text (Subsection 1.3.2). This location corresponds to black sludge found to be oozing out of the ground during the Phase II investigation. Could there be some correlation? Both the pond/lagoon and the black sludge should be shown on Figure 1-2. SUGGESTED CHANGE, Page 8, Paragraph 5, add to end of paragraph: "In the 1970 aerial photograph (Appendix A), a pond or lagoon is visible just to the west of the Kapica Drum area, in the present location of a seep of black sludge (Figure 1-2)."

1.3.3 No comments.

## SECTION 2

2.1 Page 2, Paragraph 1 - SUGGESTED CHANGE, Page 2, Paragraph 1, Sentence 3: "The gradiometer was considered most appropriate because the magnetic gradients are not affected by diurnal variations and the gradient resolution is significant for shallow targets."

Appendix C, The figure entitled "Draft Contour Map of Total Field Magnetic Values (gammas)" should be renamed because it presents the gradient of the total magnetic field - not the total magnetic field. SUGGESTED CHANGE, "Contour of the Magnetic Gradient over the On-Site Containment." General Comment - The data interpretations for the magnetic data have not been presented. Please provide.

Page 2, Paragraph 4 - If the purpose of the EM surveys involved ferrous detection in the On-Site and Off-Site Containment Areas, the data resolution would have been significantly more informative if the in-phase component



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of the induced magnetic field had been measured. Please provide the data interpretations for the EM data.

2.2

2.2.1 Table 2-1 - Comparison with WESTON's field notes found no discrepancies in the upper monitoring well construction details. Section 2.2.1 accurately describes installation of upper aquifer monitoring wells. Comparison with WESTON's field notes found no discrepancies. No discrepancies were identified in the methods used and those established in the QAPP and SAP for the RI.

2.2.2 Table 2-1 - Comparison with WESTON's field notes found no discrepancies in the lower monitoring well construction details. Section 2.2.1 accurately describes installation of lower aquifer monitoring wells. Comparison with WESTON's field notes found no discrepancies. One minor discrepancy was identified in the methods used and those established in the QAPP and SAP for the RI. The SAP called for bentonite grout to be used above the bentonite seal to within 3 feet of the surface and for cement-bentonite grout from this point to the surface. The RI reports (Page 5, Paragraph 2) that cement-bentonite grout was used from the seal to the surface. This is an acceptable alternative, but this field decision should be noted in the text. SUGGESTED CHANGE, Page 5, Paragraph 2, insert after Sentence 8: "The SAP called for bentonite grout to be used above the bentonite seal to within 3 feet of the surface and for cement-bentonite grout from this point to the surface. However, cement-bentonite grout was used from the seal to the surface."

2.2.3 Table 2-1 - Comparison with WESTON's field notes found no discrepancies in the piezometer construction details. Section 2.2.1 accurately describes installation of piezometers. Comparison with WESTON's field notes found no discrepancies. One minor discrepancy was identified in the methods used and those established in the QAPP and SAP for the RI. The SAP stated that piezometers would be installed by jetting them into the ground, except for



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piezometers in the landfill, which were to be drilled. The RI (Page 5, Paragraph 3) reports that all piezometers were installed by drilling. This is an acceptable alternative, but this field decision should be noted in the text. SUGGESTED CHANGE, Page 5, Paragraph 3, change Sentence 2 to: "Piezometer installation was completed following the guidelines described in the QAPP and SAP, except drilling was used on all installations instead of jetting most of them into the ground as originally planned."

2.2.4 Table 2-1 - Comparison with WESTON's field notes found no discrepancies in the leachate monitoring well construction details. Section 2.2.1 accurately describes installation of leachate monitoring wells. Comparison with WESTON's field notes found no discrepancies. No discrepancies were identified in the methods used and those established in the QAPP and SAP for the RI.

2.2.5 No comments.

2.3

2.3.1 Page 6, Paragraph 5 - One minor discrepancy was identified in the methods used and those established in the QAPP and SAP for sampling surficial soil. The SAP had specified a shovel and a hand bucket auger for surficial sampling. The RI report stated that a drill rig and a 3-inch split-spoon sampler were used to collect surficial soils. This is an acceptable alternative, but this field decision should be noted in the text. SUGGESTED CHANGE, Page 6, Paragraph 5, change last sentence to: "Instead of using a shovel and hand bucket auger as specified in the QAPP and SAP, it was decided to use the drill rig equipped with the 3-inch outer diameter (o.d.) split-spoon sampler and solid flight augers for the Soil Area sampling."

Page 7, Line 1 - Capitalize soil area.



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2.3.2 Page 7, Paragraph 2 - Auger probes were not a method specified in the QAPP and SAP. The SAP and QAPP stated that all soil and waste borings would be drilled using split-spoon sampling techniques. However, the auger probes were used as a method for optimizing the locations of the soil and waste borings, and not replacing them. This was an acceptable field decision. However, this variance from the QAPP and SAP should be mentioned in the text. SUGGESTED CHANGE, Page 7, Paragraph 2, insert after Sentence 2: "The auger probe program was not a part of the original field investigation as outlined in the QAPP and SAP, but was added during the field investigation after consultation with and approval by the PRP steering committee and the U.S. EPA RPM."

2.3.3 Appendix D - Comparison with WESTON's field notes found no major discrepancies in the soil boring logs, only minor differences in descriptions of subsurface materials.

Page 8, Paragraph 4 - Section 2.3.2 accurately describes drilling of soil borings. Comparison with WESTON's field notes found no discrepancies. One minor discrepancy was identified in the methods used and those established in the QAPP and SAP for the RI. The SAP stated that the soil borings would be filled with bentonite grout. The RI reports that the borings were filled with bentonite grout or Holeplug. The Holeplug was used because large subsurface gaps in the Off-Site Containment Area made it impractical to use bentonite grout to seal soil/waste borings in this area. Use of Holeplug is an acceptable alternative, but this field decision should be noted in the text. SUGGESTED CHANGE, Page 8, Paragraph 4, insert after last sentence: "Although Holeplug was not specified as a material to seal boreholes in the SAP or QAPP, it was used because large subsurface gaps in the Off-Site Containment Area made it impractical to use bentonite grout to seal soil/waste borings in this area."



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2.3.4 Appendix H - Comparison with WESTON's field notes found no major discrepancies in the test pit logs, only minor differences in descriptions of subsurface materials.

2.4 Page 10, Paragraph 2 - The RI text states that the surface water samples were filtered or preserved as stipulated under the SAP. The SAP specifically states the surface water samples would not be filtered. WESTON field notes (on 20 July 1990) state the samples were sent unfiltered. This discrepancy should be corrected in the text. SUGGESTED CHANGE, Page 10, Paragraph 2, change Sentence 2 to: "As stipulated in the SAP, the samples were not filtered. The samples were then preserved, packed, and transported under chain of custody as described in the Sampling and Analysis Plan."

2.5

2.5.1 No comments.

2.5.2 No comments.

2.5.3 No comments.

2.6

2.6.1 Appendix J - Three discrepancies were found in values recorded from the Tracer Research Corporation (Tracer) samples. WESTON recorded that sample GW1 at 11 feet contained 93 ug/l toluene, while the RI report listed 94 ug/l. WESTON recorded that sample GW2 at 14 feet contained 600 ug/l xylene, while the RI report listed 540 ug/l. WESTON recorded that sample GW6 at 10 feet contained 0.7 ug/l THC, while the RI report listed 0.8 ug/l. Warzyn's field notes and Tracer's field notes should be examined to determine the correct values.

Figure 2-6 - The area between GW6 and GW4 (east of Colfax Drive) was not sampled by Tracer. Therefore using only Tracer data resulted in a large gap between sampling points. This gap should be dashed to show the plume



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boundary is inferred. If monitoring well data (from MW-7 and MW-12) were used to substantiate this line, then these sampling points should be placed on the figure and the figure should be renamed.

2.6.2 No comments.

2.6.3 Page 14, Paragraph 3 - The samples analyzed for metals were field-filtered. Although the RI text makes a generic statement in Page 14, Paragraph 4 that QAPP procedures were followed, this subsection should state the metal samples were field-filtered and briefly describe the filtration apparatus used. SUGGESTED CHANGE, Page 14, Paragraph 2, insert after last sentence: "The metal samples were field-filtered to remove solids to 0.45 microns before being preserved [state apparatus used]."

2.6.4 Page 15, Paragraph 3 - The samples analyzed for metals were field-filtered. Although the RI text makes a generic statement in Page 16, Paragraph 1 that QAPP procedures were followed, this subsection should state the metal samples were field-filtered and briefly describe the filtration apparatus used. SUGGESTED CHANGE, Page 15, Paragraph 2, insert after last sentence: "The metal samples were field-filtered to remove solids to 0.45 microns before being preserved [state apparatus used]."

2.6.5 No comments.

### SECTION 3

3.1 No comments.

3.2 No comments.

3.3 No comments.

3.3.1 No comments.

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3.3.2

3.3.2.1 No comments.

3.3.2.2 No comments.

3.3.3

3.3.3.1 No comments.

3.3.3.2 No comments.

3.4

3.4.1 No comments.

3.4.1.1 Page 5, Paragraph 2 - Revise Sentence 1 to: "Prior to initiating any intrusive investigative methods, a nonintrusive ...." Also, Appendix O should be Appendix C.

Page 6, Paragraph 4 - Second sentence in bullet beginning with SB09A is incomplete and unclear. Please address.

Page 5, Paragraph 4, Sentence 1 - Revise to: "The EM survey indicated one major conductivity anomaly ...."

Appendix C - The titles of EM figures in Appendix C should identify which induced magnetic component was measured, e.g., "Contour Map of Low Quadrature Values." The titles for EM data tables should also identify which induced magnetic component was measured. Why are data not shown for the On-Site EM Survey and the Still Bottoms Area Survey? Please provide these data.

Section 2, Page 2, Paragraph 4 - If the purpose of the EM surveys involved ferrous detection in the On-Site and Off-Site Containment Areas, the data resolution would have been significantly more informative if the in-phase component of the induced magnetic field had been



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measured. Where are the data interpretations for the EM data?

3.4.1.2 No comments.

3.4.2 No comments.

3.4.2.1 No comments.

3.4.2.2 No comments.

3.4.3 No comments.

3.4.3.1 No comments.

3.4.3.2 No comments.

3.4.4 No comments.

3.4.4.1 No comments.

3.4.4.2 Page 14, Paragraph 5 - No mention is made here of possible correlation of the dark ditch feature in Aerial Photograph B22 (1970) and the oily area west of the fire pond. This possibility should be addressed. SUGGESTED CHANGE, Page 14, Paragraph 5, insert after last sentence: "In the 1970 aerial photograph (Appendix A), a drainage ditch is apparent near the location of P-37. The drainage ditch has since been filled, but it is a possible source of the brownish-red oily substance."

3.4.5 No comments.

3.4.5.1 No comments.

3.4.5.2 Page 19, Paragraph 4 - Most of the auger probes (AP-63 to AP-71) and three of the soil borings (SB-40, SB-41, SB-42) contained evidence of garbage disposal and leachate in the west and southwest areas of the Off-Site Containment Area. This observation should be stated in this section and discussed briefly. SUGGESTED CHANGE,



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Page 19, Paragraph 4, delete Sentences 3 and 4 and replace with: "In general, many of the auger probes and soil borings contained evidence of municipal garbage buried in these areas at depths from 3 to 10 feet, making it difficult to distinguish the boundary between the ACS waste and the Griffith Municipal Landfill. Three soil boring locations, SB-40, SB-41, and SB-42, were selected to represent the subsurface conditions in this area. These soil borings were drilled in several locations before representative samples for soil analysis were obtained. The subsurface contents at these three boring locations indicate that municipal waste was placed over buried ACS waste or directly adjacent to it."

Page 20, Paragraph 1 - No mention is made here of a possible correlation between one of the three lagoons or ponds identified in aerial photographs and the dark oily substance leaking from underground. This and any other correlation between ponds and waste areas should be addressed. SUGGESTED CHANGE, Page 20, Paragraph 1, add after last sentence: "The location of the oily seep corresponds to the location of a pond or lagoon located to the west of the Kapica Drum Recycling Area and identified in the 1970 aerial photograph (Appendix A). The oily seep may be a remnant of this lagoon or pond. Two other ponds or lagoons can be seen in the general area of the Off-Site Containment Area in the 1970 aerial photograph."

- 3.5 No comments.
- 3.5.1 No comments.
- 3.5.2 No comments.
- 3.5.3 No comments.
- 3.5.4 No comments.
- 3.5.5 No comments.

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#### SECTION 4

4.1 No comments.

4.2 Page 2, Paragraph 3 - The RI report does not provide an explanation for why these surface features have a great effect on the site conditions, nor does it list the surface features that are affected. Brief summary statements or a reference to where this effect is explained is necessary for this paragraph to be meaningful. SUGGESTED CHANGE, Page 2, Paragraph 3, insert after last sentence: "These features are major factors in the surface water drainage and groundwater infiltration of the site and their effects are examined in Section 4.4.2."

4.3

4.3.1

4.3.1.1 Figure 4-1 shows sand and gravel units interconnecting between the Calumet Aquifer and the Valparaiso Aquifer in the area of the ACS Site, hence indicating that there is no clay confining layer in this area. This figure does not agree with the text (Page 2, Paragraph 5). Also, this figure should have a vertical scale. SUGGESTED CHANGE, Page 2, Paragraph 5, insert after Sentence 5: "Previous investigations have indicated that the clay confining layer may not be continuous in the region around the ACS site, and may pinch out to the south (Hartke et al., 1975, Figure 15). However the degree of interconnection between the Calumet Aquifer and Valparaiso Aquifer near the ACS site, if any, was not determined by previous investigations." Move the third sentence to the end of the paragraph: "These units are ... Glacial Geology."

4.3.1.2 No comments.

4.3.2 No comments.

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4.3.2.1 No comments.

4.3.2.2 Page 4, Paragraph 6 - An explanation should be given to correlate between what was learned in the field investigation and what had been suggested in the literature - that is, the field determination that clay is thinning in a northwestern direction despite the regional cross-section in Figure 4-1 showing that the confining layer pinches out to the south. SUGGESTED CHANGE, Page 4, Paragraph 6, insert at the end of the paragraph: "There is no indication from the RI's subsurface investigations that the confining clay layer pinches out to the south near the ACS site, as suggested by Figure 4-1. Locally, the clay layer is thickest to the south and is continuous throughout the investigation area."

4.3.2.3 Page 5, Paragraph 4 - Which on-site water supply well is the text referring to? Is the driller's log in any appendix? Please clarify.

4.3.3 Page 5, Paragraph 5 - Which on-site water supply well is the text referring to? Is the driller's log in any appendix? Please clarify.

4.4 Page 6, Paragraph 1 - A transitional sentence should be added here if the general conclusion that the surface drainage is entirely within the southern drainage basin is introduced in the section on hydrology. SUGGESTED CHANGE, Page 6, Paragraph 1, insert at end of paragraph: "This conclusion is discussed in more detail in the following subsections."

4.4.1 Page 6, Paragraph 3 - Which drainage ditch is discussed in the last sentence of the paragraph? Is there a drainage ditch along the linear contours referred to in the paragraph, and does it directly connect with Turkey Creek? Please clarify.



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- 4.4.2 Page 7, Paragraph 1 - The discussion about surface drainage to the north of the site near the northern ACS fence and the east-west railroad is incomplete. No mention is made of the intermittent drainage ditch which drains to the north away from the ACS fence and toward the woods between the fence and the railroad. Water from this ditch infiltrates into the ground in this woods. Also, no mention is made of the culvert under the railroad tracks. This culvert connects a system of drainage ditches to the north of the railroad tracks with the drainage ditch that "flows into the site at the northern boundary directly north of the western ACS fence line." These drainages are not marked on Figure 4-12 and should be added. SUGGESTED CHANGE, Page 7, Paragraph 1, insert before Sentence 1: "An intermittent drainage ditch drains to the north, away from the north ACS fence and toward the woods between the fence and the railroad. Water from this ditch infiltrates into the ground in this woods. This ditch is only active during precipitation events. To the north of ACS, the ditch along the south side of the railroad (railroad north of ACS site) ends at a culvert under the railroad tracks. This culvert connects to a network of drainage ditches to the north of the railroad. The remaining surface water flows past ... north to south."
- 4.5
- 4.5.1
- 4.5.1.1 Page 8, Paragraph 3 - The text states that in some places the clay till is absent. This statement implies that in some locations the Calumet Aquifer and the Valparaiso Aquifer are hydrologically connected. Please discuss whether this inference is correct, and what effect this occasional interconnection will have on the potentiometric surfaces of the two aquifers.
- 4.5.2 No comments.



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- 4.5.2.1 Page 12, Paragraph 1 - Does the lower elevation of the clay in the leachate headwell LW-4 indicate that the landfill operators excavated a portion of the clay layer during the landfill operations?
- 4.5.2.2 Page 12, Paragraph 2 - In Section 2.5.3, these tests are called "baildown tests." In our experience the term "aquifer test" is usually synonymous with "pumping test," and "baildown tests" are synonymous with "slug tests," or "in situ hydraulic conductivity (permeability) tests." SUGGESTED CHANGE, Page 12, Paragraph 2, (and in subsequent sections) delete references to "aquifer tests" and replace with one of the aforementioned terms.
- 4.5.2.3 Page 15, Paragraph 2 - The summer and fall of 1989 was a very dry period for much of the United States. Many areas of the Midwest were under drought conditions. However, the precipitation report for Griffith, Indiana, as listed in Table 4-1, shows that 58.1 inches of precipitation fell in 1989. This level is well above the annual average of 37 inches of precipitation per year (as listed in Section 4.1). If 1989 is examined by month, May, June, July, August, and September were the wettest in Griffith, with October, November, and December having significantly less precipitation. Therefore the hydrograph for SG-7 seems to follow the precipitation pattern of 1989. The statement that the normal recharge pattern was not followed may be inaccurate. SUGGESTED CHANGE, Page 15, Paragraph 2, Sentence 1, add the word "precisely" to end of sentence. Then replace the last sentence with: "This hydrograph does reflect the precipitation pattern of 1989 (which was an above average year for precipitation) for Griffith, Indiana. This area experienced a very wet May, June, July, August, and September while October, November, and December had significantly less precipitation."
- 4.5.2.4 No comments.
- 4.5.2.5 No comments.



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- 4.5.2.6 Page 22, Paragraph 3 - The flow gradients changed slightly in direction from wet to dry seasons. Was the range in the seepage velocities due to seasonal variation? Was there any detectable seasonal pattern in the velocities? Please address.
- 4.5.3 No comments.
- 4.5.3.1 No comments.
- 4.5.3.2 No comments.
- 4.5.3.3 No comments.
- 4.5.3.4 No comments.
- 4.5.3.5 No comments.
- 4.5.4 No comments.
- 4.5.4.1 No comments.
- 4.5.4.2 No comments.
- 4.5.4.3 No comments.
- 4.5.4.4 Page 27, Paragraph 1 - The vertical hydraulic conductivity values derived from laboratory tests probably underestimate the bulk (field) values due to till fractures and textural inhomogeneities. Fractures were described in Section 4.3.2.2 (Paragraph 1). Secondary permeability typically causes bulk hydraulic conductivity values to be at least one order of magnitude greater than laboratory-derived values. Groundwater flow rates are proportionally higher. If fracture permeability dominates, retardation is probably less due to the smaller surface area of sediment to which the solutes are exposed. SUGGESTED CHANGE, Page 22, Paragraph 1, Incorporate the above-stated comment about secondary permeability.





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4.6 No comments.

## SECTION 5

5.0 No comments.

5.1 Page 4, Paragraph 1 - Were any of the compounds detected in the various media but not listed in the working groups significant contaminants with distinctive properties? If so, they should be mentioned here and discussed in the appropriate places in the rest of the section.

Page 5, Paragraph 4 - Were any comparisons done with the other metals with respect to lead? If not, then what justification is used for making lead the indicator of the distribution of the TAL metals other than chromium? Please expand.

5.2 No comments.

5.2.1 Page 6, Paragraph 4 - What criteria are being used to evaluate the biochemical decomposition rates of the landfill. Why is biochemical decomposition more active in the newer area of the landfill? Please expand.

5.2.2 Page 7, Paragraph 2 - Discussion is uninformative because vague references to higher values are provided instead of actual quantities. Define what "high" means: Double background, 10 times, 20 times? The discussion should relate the relative terms to the indicator TAL metal (lead).

5.3 No comments.

5.3.1 Page 8, Bullets 8 through 12 - Discussion is uninformative because vague references to low or high values are provided instead of actual quantities. The discussion should define "low", i.e., less than 10 ppb or 100 ppb, etc., or give ranges of concentration. Please elaborate.



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Page 8, Bullet 2 - Sediment samples SD-03 and SD-16 are located in the apparent former drainage ditch from ACS that is visible in 1970 aerial photograph. A discussion associating and clarifying these sediment samples with the previously existing drainage should be added. SUGGESTED CHANGE, Page 8, Bullet 2, change Sentence 3 and add: "SD03 is located at a former drainage ditch location (1970 aerial photograph, Appendix A), and SD16 is located ... ACS facility. This drainage ditch and settling point appeared to drain the Still Bottoms/Treatment Lagoon area in the 1970 aerial photograph and the contaminant groups detected in these samples may have originated from this drainage."

5.3.2 Page 10, Bullet 1 - BEXT should be BTEX in line 5.

Page 10, Bullet 2 - The second sentence states that contaminants at this sampling location may have originated from the commercial establishments along Reder Road. In order to justify this statement, background information regarding hazardous material use along Reder Road should be added here, or the location of this information elsewhere in the report should be referenced.

5.4 Page 10, Paragraph 3 - To what stratigraphic depth do the overlays examine the contamination? To the top of the clay underlying the first aquifer? This depth is not stated clearly in the text. Please clarify.

5.4.1 Page 12, Paragraph 1 - The buried drums were located in the northwestern portion of the On-Site Containment Area, but this fact is not made clear in the text. Either state this or reference Figure 1-2. SUGGESTED CHANGE, Page 12, Paragraph 1, change Sentence 3 to: "The buried drums are found in an area approximately 50 feet by 50 feet in the northwestern portion of the On-Site Containment Area, and appeared to be stacked three high in the test pit excavations. Their exact location is shown in Figure 1-2."



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Page 12, Paragraph 1 - There appears to be two distinct areas of VOC and PCB contamination in the On-Site Containment Area. The first is the drum burial area, and the second is the southeast area of the On-Site Containment Area centered around soil borings SB-55, SB-57, and SB-60. This pattern seems to imply two sources of contamination for the On-Site Containment Area. This pattern was addressed in the text (Section 4.1.1) when discussing VOCs but no mention was made of possible sources. The text states only that the drums are possibly the major source of potential contaminants. This should be qualified. SUGGESTED CHANGE, Page 12, Paragraph 1, last sentence: "It is possible that the drums represent a major source of potential contaminants in this area, although the soil sample analyses indicate several areas of soil contamination throughout the On-Site Containment Area."

5.4.1.1 No comments.

5.4.1.2 No comments.

5.4.1.3 No comments.

5.4.2 No comments.

5.4.2.1 No comments.

5.4.2.2 No comments.

5.4.2.3 Page 19, Paragraph 5 - The first sentence is incomplete. Please correct the text to indicate where the chromium and lead were detected.

5.4.3 Page 19, Paragraph 6 - The text does not indicate that this area was a former drainage ditch as indicated by the 1970 aerial photograph. This is a plausible explanation for the source of these contaminants. SUGGESTED CHANGE, Page 19, Paragraph 6, insert after Sentence 1: "Review of the 1970 aerial photograph indicated this area was a former drainage ditch which has since been filled."

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5.4.4 No comments.

5.4.5 Page 21, Paragraph 4 - As stated previously in comments on Section 3.4.5.2, a detailed discussion of the relationship between the buried chemical waste from ACS in the Off-Site Containment Area and the garbage disposed by Griffith Landfill should be presented. The soil borings and auger probes on the western edge of the Off-Site Containment Area indicate that these boundaries are very close if not overlapping. Auger probes AP-63 to AP-71 and soil borings SB-40 to SB-42 encountered the overlapping conditions. Some clarification on one of the figures (perhaps Figure 1-2) would also be appropriate.

5.4.5.1 Page 21 - One flaw of discussion using the 1 ppm VOC and PCB criterion for plume delineation is that the point where detectable contamination ends or begins (i.e., the area that appears to be unaffected by the contaminants) has not been identified. This is addressed partly in the northern areas by the Tracer work identifying the extent of the organic plume in the groundwater. However the Tracer study did not extend to the Griffith Landfill, Off-Site Containment Area, and the Kapica Drum area. This flaw should be addressed in each section of the text.

5.4.5.2 No comments.

5.4.5.3 No comments.

5.4.6 No comments.

5.4.6.1 No comments.

5.4.6.2 No comments.

5.4.6.3 No comments.

5.5 No comments.

5.5.1 No comments.

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Mr. Robert Swale

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3 April 1991

- 5.5.1.1 Page 29, Paragraph 1 - What appears to be the sources of the two upper aquifer organic contaminant plumes? Do they match the waste disposal areas? This is not made clear in the text.
- 5.5.1.2 Page 33, Bullets - Discussion would be clearer in bullets if the probable source of each detection of the inorganic constituent is stated, such as was generally mentioned for wells MW-03, MW-04, and MW-06 in Page 33, Paragraph 3.
- 5.5.2 No comments.
- 5.5.2.1 No comments.
- 5.5.2.2 Page 37, Paragraph 1 - This statement should be expanded. Why is the leachate from the landfill a possible contributor to the lower aquifer contamination?
- 5.5.3 No comments.

If you have any questions concerning WESTON's review comments, please do not hesitate to call.

Very truly yours,

ROY F. WESTON, INC.

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Site Manager

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Attachment